



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,981	09/19/2003	Harold R. Garner	UTSW:1063	5373
34725	7590	05/11/2010		
CHALKER FLORES, LLP			EXAMINER	
2711 LBJ FRWY			LU, CHARLES EDWARD	
Suite 1036				
DALLAS, TX 75234				
			ART UNIT	PAPER NUMBER
			2161	
			MAIL DATE	DELIVERY MODE
			05/11/2010 PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/665,981

**Applicant(s)**

GARNER ET AL.

**Examiner**

CHARLES E. LU

**Art Unit**

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 7-8, 10-29, 45, 47-61, 68-69, 109-110, 127-135, and 151 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8, 10-29, 45, 47-61, 68, 69, 109, 110, 127-135 and 151 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-840)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Action is in response to the Request for Continued Examination filed 4/22/2010. Claims 1-3, 7-8, 10-29, 45, 47-61, 68-69, 109-110, 127-135, and 151 are pending and rejected.

#### ***Response to Arguments/Response to Amendments***

2. The Examiner acknowledges the updated status of claim 110. The claim objections are withdrawn in view of the amendments. The prior 35 USC 112, second paragraph rejections are withdrawn in view of the amendments.

With regard to the 35 USC 103(a) rejections, Applicant argues that the prior art references do not teach or suggest "...to identify previously known relationships between the data objects where no link previously existed" (Remarks, p. 14, middle). Applicant argues the claims as amended. The previous grounds of rejection are thus withdrawn and the new interpretation/grounds of rejection are necessitated by amendment.

Applicant further argues that the prior art references do not teach or suggest "a knowledge discovery engine...wherein the data objects are a noun...numeric character" (p. 14, bottom). Specifically, Applicant argues that the prior art references do not perform all the recited steps "on a noun, verb...or numeric character." The examiner respectfully disagrees. The claims do not recite that the steps are performed "on a noun, verb, phrase, etc." Rather, the claims recite that data objects "comprise" a noun, verb, phrase, etc., and the steps are performed on the data objects. The prior art

hypermedia objects are data objects, which, as modified in the rejection, comprise a noun, verb, phrase, etc. because the data objects can be documents. The claimed steps are performed in the prior art on the objects (e.g., documents). Thus, the limitations are met.

Applicant further argues that Kennedy does not teach or suggest “identifying capitalizations and patterns for words” and “use of an acronym resolving algorithm” because it is “not required” to eliminate the duplicate response to a query. (p. 15 middle). The examiner respectfully disagrees.

As stated in the prior rejection, Brown as applied above does not expressly teach identifying capitalizations and patterns for words by accessing a word database or an acronym resolving algorithm.

However, Kennedy teaches identifying capitalizations and patterns for words (e.g., synonyms, acronyms) by accessing a word database (e.g., fig. 3), and an acronym resolving algorithm (e.g., fig. 3, resolving of acronym for Compact Disk/CD).

Applicant appears to argue that Kennedy is nonanalogous art. However, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Kennedy is in the field of Applicant's endeavor (knowledge base, see col. 1, l. 57) and reasonably pertinent to the particular problem with which applicant was concerned (e.g., to find capitalizations and patterns for words/resolving acronyms by accessing a

word database). Invalid responses to query are eliminated by comparing synonyms of a stripped query to a response (e.g., figs. 3-4). In doing so, Kennedy teaches identifying capitalizations and patterns for words by accessing a word database (fig. 3), and an acronym resolving algorithm, as claimed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, capitalizations and patterns for words are found, and acronyms are resolved. The motivation would have been to facilitate data accessibility, search, and retrieval, as known to one of ordinary skill in the art and taught by Kennedy. For example, a better search and retrieval with fewer invalid responses can be conducted using the claimed word database. As such, the prior art teaches or suggests at least the claimed subject matter.

As to claims 51-52, Applicant argues that Brown does not re-compute a data object network or re-compute results (p. 15 bottom). The examiner respectfully disagrees. The broadest reasonable interpretation has been given to the claims. The claims do not recite, for example, particularly what results are recomputed, or what data is contained within the object network, nor what "recomputation" specifically means. Using the broadest reasonable interpretation, Brown teaches or suggests the claimed subject matter, because the iterative process repeats processing (i.e., "recomputes") on the data relationship network to identify the parents and children (and ancestors) (e.g., col. 13, l. 48 - col. 14, l. 34). Also see below rejection in response to the amendment which contains an alternate interpretation of the claimed subject matter.

3. Applicant's remaining arguments depend on an argument previously addressed.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**4. Claims 1-3, 7-8, 10-29, 45, 47-61, 68-69, 109-110, 127-135, and 151 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

**As to all independent claims**, the specification may support identifying relationships, but does not support the amended subject matter of "identifying previously unknown relationships between the data objects where no link previously existed."

**Dependent claims** are rejected because they depend from one of the above rejected claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**5. Claims 1-3, 7-8, 10-29, 45, 47-61, 68-69, 109-110, 127-135, and 151 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to**

**particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

**As to all independent claims**, it is unclear what is meant by “to identify previously unknown relationships between the data objects where no link previously existed” at least because there could be more than two objects, and it is unclear which two or more objects do not have a link between them.

**Dependent claims** are rejected because they depend from one of the above rejected claims.

The broadest reasonable interpretation has been given to the claims.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**6. Claims 1-3, 7-8, 10-15, 17-29, 47-58, 109-110, and 151 are rejected under 35 USC 103(a) as being unpatentable over Brown et al. (US Patent 5,875,446), hereinafter “Brown,” in view of Kennedy et al. (US Patent 6,269,364), hereinafter “Kennedy.”**

**As to claim 1**, Brown teaches the claimed subject matter including:

A source of data comprising one or more domains of information (e.g., figs. 2-5, col. 6, ll. 25-30);

An object relationship database comprising data objects from the one or more domains of information (e.g., figs. 2-5, fig. 6-9 for the specific structure of database);

A processor (e.g., col. 6, ll. 10-25) linked to the ORD, wherein the processor executes a knowledge discovery engine (software) where relationships between two or more integrated data objects within the ORD are (a) identified as direct or indirect relationships (e.g., col. 8, ll. 22-55, col. 9, ll. 42-48), retrieved, grouped into categories selected from the group consisting of positive effect, negative effect, physical association, and logical association (e.g., fig. 13; parent-child relationships are understood to read on at least a physical or a logical association; also see col. 13, ll. 49-51), ranked based on a relative strength of the identified relationship between direct and indirect objects (e.g., col. 15, ll. 20-40, fig. 8, col. 8, ll. 22-40), filtered, and numerically evaluated (Also see in general, figs. 10-13, at least cols. 12, l. 54 – col. 16, l. 34; col. 10, ll. 16-35, 65-67, col. 13, ll. 30-50, col. 14, ll. 24-26, col. 15, ll. 20-42, 65-67).

A user interface linked to the processor (e.g., fig. 13).

Brown does not expressly teach wherein each data object comprises a noun, verb, adjective, adverb, phrase, sentence, symbol, or numeric character.

However, Brown is drawn to items such as books, articles, or reports that contain text (col. 6, ll. 25-30). Thus, such documents (which are data objects) should comprise at least a noun, verb, adverb, phrase, or sentence, because books, articles, and reports should be written in a language.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, to support a noun, verb, etc., as claimed. The motivation would have been to support a user's particular type of data and data



access (e.g., using documents written in English), as known to one of ordinary skill in the art.

Brown does not expressly teach (filtering) by lexical processing.

However, Kennedy teaches filtering by lexical processing (e.g., col. 4, ll. 44-64, figs. 1, 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, such that the objects are filtered by lexical processing. The motivation would have been to facilitate providing more relevant search results, as taught by Kennedy (e.g., col. 4, l. 64 - col. 5, l. 1), and as known to one of ordinary skill in the art.

Brown as applied above further teaches or suggests identifying previously unknown relationships between the data objects where no link previously existed in at least two ways: (1) For example, certain objects, such as N, P, and R, could be identified as parents of other objects (col. 11, ll. 12-22). Thus, N, P, and R had no previous "link" between them, and an unknown relationship, and that Brown's processing allows the parental relationship between (or among) those objects to be realized. (2) Furthermore, in fig. 2B, Brown identifies previously unknown relationships between the data objects where no topical link previously existed (e.g., col. 10, ll. 23-31). After running the view generator of Brown, objects A, C, D, and E; and H, C, G, and F are identified to be related topically (e.g., linked topically). No topical link existed previously, since topical links are inferred by the process of Brown (e.g., col. 10, ll. 25-

30). As such, the objects are more meaningful to the user than an arbitrary graph (e.g., col. 10, ll. 34-38). A topical link meets the limitation of "link."

**As to claims 2 and 3**, Brown as applied above further teaches wherein the source is one or more databases containing textual information or numerical information (e.g., see above, books, images, video, etc., col. 8, l. 19-21).

**As to claim 7**, Brown as applied above further teaches wherein the domains of information comprise parcels of data as information as text, symbol, numerals, and combinations thereof (e.g., see above, col. 6, ll. 25-30).

**As to claim 8**, Brown as applied above further teaches wherein the system is at least partially automated (e.g., see above, fig. 1).

**As to claim 10**, Brown as applied above further teaches wherein the object relationship database is created (see above). The patentability of a product in a product by process claim is based on the product itself. The structure implied by the process steps has been considered, and the process steps are understood not to impart any distinct structural characteristics to the final product. MPEP 2113. Also see below rejection.

**As to claim 10**, Brown as applied above does not expressly teach the database created using the claimed steps.

However, Kennedy teaches the claimed steps.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, such that the database is created by the

steps of Kennedy. The motivation would have been to facilitate a database with better accessibility, as known to one of ordinary skill in the art.

**As to claim 11**, Brown as applied above does not expressly teach a database of lexical variants from a data source.

However, Kennedy teaches a database of lexical variants from a data source (e.g., fig. 1, #155, fig. 3, see above).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown to have a database of lexical variants. The motivation would have been to facilitate processing of objects for increasing the relevancy of results (e.g., using synonyms), as taught by Kennedy (e.g., col. 4, l. 64 - col. 5, l. 1), and as known to one of ordinary skill in the art.

**As to claim 12**, the combination as applied above further teaches or suggests a program for scanning the database with the database of lexical variants to add synonyms (see e.g., Brown's database, and Kennedy, fig. 3).

**As to claim 13**, Kennedy as applied above further teaches or suggests a program for checking the object relationship database for errors (e.g., invalid database entry, see fig. 4, #480).

**As to claim 14**, Brown and Kennedy do not expressly teach the ORD created using the claimed steps.

However, Brown teaches a database and an object ID. Object ID's should be unique in order for the system to distinguish objects. Furthermore, a table should be a

list of object ID's in increasing order to facilitate processing. Furthermore, Brown teaches adirectional relationships (see above, e.g., col. 8, ll. 40-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, such that the ORD is created with the claimed steps. The motivation would have been to facilitate processing data in a desired organization and order, as known to one of ordinary skill in the art.

**As to claim 15**, Brown as applied above further teaches wherein an object is retrieved from at least one of the claimed sources (see above).

**As to claim 17**, Brown as applied above does not expressly teach screening out common words.

However, Kennedy teaches screening out common words (e.g., fig. 4, #440, 450).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, such that common words are screened. The motivation would have been to facilitate a cleaner database for processing, since common words are not significant for database searching, as known to one of ordinary skill in the art.

**As to claim 18**, Brown as applied above does not expressly teach identifying capitalizations and patterns for words by accessing a word database.

However, Kennedy teaches identifying capitalizations and patterns for words (e.g., synonyms, acronyms) by accessing a word database (e.g., fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, capitalizations and patterns for words are found. The motivation would have been to facilitate data accessibility, search, and retrieval, as known to one of ordinary skill in the art and taught by Kennedy.

**As to claims 19, 20, and 24**, Brown as applied above does not expressly teach using a synonym database and an acronym resolving algorithm.

However, Kennedy teaches using a synonym database and an acronym resolving algorithm (e.g., see fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, such that a synonym database and an acronym resolving algorithm are used. The motivation would have been to facilitate data accessibility, search, and retrieval, as known to one of ordinary skill in the art and taught by Kennedy.

**As to claims 21-22**, Brown as applied above further teaches a graphical user interface for displaying one or more objects, and wherein the interface comprise a control element which can be clicked to display the integrated object derived from the context of the source data (e.g., see above and fig. 13).

**As to claims 14, 17-20, and 23-29**, Brown as applied above further teaches wherein an Object Relationship Database is constructed (see above). These claims are drawn to the process of creating the database. The patentability of a product in a product by process claim is based on the product itself. The structure implied by the process steps has been considered, and the process steps are understood not to impart

any distinct structural characteristics to the final product. MPEP 2113. Also see below rejection.

**As to claim 23**, Brown as applied above does not expressly teach wherein the ORD is constructed using the claimed method.

However, Brown teaches a block of text, a source of data, a record, and arrays. Thus, Brown suggests that an ORD could be constructed using the claimed method.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown and Kennedy, such that the ORD is constructed using the claimed method. The motivation would have been to conform to the user's requirements for creating a database.

**As to claim 25**, Brown as applied above does not expressly teach wherein the method further comprises parsing the record into sentences and parsing each sentence into words.

However, Kennedy strips response of common words, and processes the remaining words (e.g., fig. 4). Thus, Kennedy could parse records into sentences and the sentences into words, to achieve the individual words.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown. such that the claimed parsing is implemented. The motivation would have been to facilitate identifying the elements of the document, as taught throughout Kennedy and known to one of ordinary skill in the art.

**As to claim 27**, Brown as applied above further teaches or suggests wherein the block of text is selected from at least one of the items in the list (see above).

**As to claim 29**, Brown as applied above further teaches or suggests the claimed subject matter (e.g., see above, col. 15, ll. 20-25).

**As to claim 47**, Brown as applied above further teaches a computer readable storage medium for storing the object relationship database (see above; fig. 1).

**As to claim 48**, Brown as applied above further teaches a client/server architecture wherein at least two functions of the system are distributed in a server and at least one client computer connectable to the network (see above, fig. 1).

**As to claim 49**, Brown as applied above further teaches wherein the system comprises a program for accessing one or more data sources (see above).

**As to claim 50**, Brown as applied above further teaches wherein the object relationship database is dynamic, and adds new objects from the one or more data sources to the database (see above).

**As to claim 51**, Brown as applied above further teaches wherein the system recomputes a data object network when new objects are added from the one or more data sources (e.g., see above, col. 8, l. 58 – col. 12, l. 52, fig. 13, note recursive process).

**As to claim 52**, Brown as applied above further teaches wherein the system further comprises an engine for monitoring re-computation results, and wherein the system re-evaluates relationships between data objects (see above, note iterative/recursive process).

**Also as to claims 51-52**, assuming that Brown does not expressly teach "recomputing a data object network when new data objects are added from the one or more data sources" or "monitoring recomputation results, wherein the system reevaluates relationships between data objects" (which is not admitted):

Brown teaches an object network of documents (e.g., fig. 2-5). Since the documents are drawn to a computing system (e.g., col. 6, ll. 25-30) for a "planetwide" search result (e.g., fig. 13), it is suggested that the document set and their relationships can change. For example, someone on the network can add a document, such as creating a new web article, col. 6, ll. 11-30, and the system would thus need to recompute the data object relationship network, monitor recomputation results, and reevaluate relationships between data objects, at least when providing results to the user based on the updated document set, in order to provide correct updated search results.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown, such that the claimed subject matter is implemented. The motivation would have been to provide correct updated search results when the set of documents and their relationships have changed.

**As to claim 53**, the database is "downloadable" to the client computer as claimed because the database is data, and Brown teaches a network and a client computer transferring data.



**As to claim 54**, Brown as applied above further teaches wherein the database (network) is stored in memory of the server computer and the at least one client can access the database by communicating with the server (see above).

**As to claim 55**, Brown as applied above further teaches wherein the system further comprises a results and analysis database, wherein the results and analysis database comprises information relating to a query regarding an object relationship and results of the query (e.g., figs. 7, 13, see above).

**As to claim 56**, Brown as applied above further teaches wherein the results and analysis database further comprises a record comprising information relating to an interpretation of the results (e.g., see above, fig. 13, col. 16, ll. 13-30).

**As to claim 57**, Brown as applied above further teaches wherein the results and analysis database further comprises data validating the results (see above and fig. 13).

**Claims 58, 109, 110, and 151** are rejected based on the same reasoning as one or more of the above claims.

**7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Kennedy and Ellis et al (US 6,654,736), hereinafter "Ellis."**

**As to claim 28**, Brown and Kennedy as applied above does not expressly teach wherein the block of text is selected from the Physician's Desk Reference.

However, Ellis teaches a block of text selected from the Physician's Desk Reference (col. 4, ll. 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown and Kennedy, such that the Physician's

Desk Reference can be accessed. The motivation would have been to add medical sources to be processed, thus increasing the applicability of the system, as known to one of ordinary skill in the art.

**8. Claims 16, 26, 59-61, 68, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Kennedy and Adamic et al. (US 2003/0186243), hereinafter “Adamic.”**

**As to claim 16**, Brown and Kennedy as applied above do not expressly teach wherein the objects are at least one of the items in the claimed list.

However, Adamic teaches wherein the objects are at least one of the items in the claimed list (e.g., fig. 1, ¶¶ 0021-0022).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown and Kennedy, such that database objects comprise drug information as disclosed by Adamic. The motivation would have been to facilitate search and retrieval of medical information, thus enabling the combination to be applicable in a medical field, as known to one of ordinary skill in the art. Another motivation would have been to facilitate finding genes associated with diseases, as taught throughout Adamic.

**As to claim 26**, Brown and Kennedy as applied above teaches wherein information (in a database) comprises title (e.g., fig. 6A, #235), but does not expressly teach abstract, date, and PMID fields.

However, Adamic teaches all of title, abstract, date, and PMID fields (e.g., ¶¶ 0021-0022).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown and Kennedy, such that the information includes title, abstract, date, and PMID. The motivation would have been to facilitate having a complete record of an item for processing, as known to one of ordinary skill in the art, and seen in Adamic.

**As to claim 59**, Brown and Kennedy as applied above teaches ranking, but does not expressly teach generating a linear or nonlinear grouping of individual ranking factors.

However, Adamic teaches generating a linear or nonlinear grouping of individual ranking factors (e.g., fig. 4A, ¶¶ 0041-0049).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown and Kennedy, such that a linear or nonlinear grouping of individual ranking factors. The motivation would have been to facilitate probabilistic relevance calculations, as taught by Adamic (e.g., ¶ 0043).

**As to claim 60**, Adamic as applied above further teaches or suggests wherein each individual ranking factor is associated with a coefficient that weighs each term (see above).

**As to claim 61**, Adamic as applied above further teaches or suggests wherein weight is determined by at least one of the listed factors (see above).

**As to claim 68**, Adamic as applied above further teaches or suggests wherein the frequency of co-occurrences of objects within the data source is determined (e.g., see above and Fig. 4B).

**As to claim 69**, Brown and Kennedy as applied above do not expressly teach generating a comprehensive network of relationships to identify implicit relationships.

However, Adamic teaches or suggests wherein a knowledge discovery engine generates a comprehensive network of relationships to identify the implicit relationships and facilitate probabilistic relevance calculations (e.g., Adamic, see above, ¶¶ 0041-0049). Brown teaches a network of relationships (see above, figs. 2-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown and Kennedy, such that generating a comprehensive network of relationships to identify implicit relationships is implemented. The motivation would have been to facilitate information search and retrieval, and facilitate probabilistic relevance calculations (e.g., Adamic, see above, ¶¶ 0041-0049), as taught throughout Adamic.

**9. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Kennedy and Hong et al (U.S. Patent 5,764,799), hereinafter “Hong.”**

**As to claim 45**, Brown and Kennedy as applied above does not expressly teach a scanning module comprising a scanner for scanning printed information and generating a data source from the printed information.

However, Hong teaches a scanning module comprising a scanner for scanning printed information and generating a data source from the printed information (e.g., fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brown and Kennedy, such that a scanning module as claimed is implemented. The motivation would have been to allow scanned information to be electronically searched, as known to one of ordinary skill in the art.

**10. Claims 127-130, and 132-135 are rejected under 35 USC 103(e) as being unpatentable over Adamic in view of Brown and Kennedy.**

As to claim 127, Adamic teaches a method comprising the steps of identifying one or more co-occurrences of objects within one or more topical sets in a domain of information, and evaluating the probability that one or more co-occurrences of objects represents a meaningful relationship within one or more topical sets (e.g., fig. 4B). Adamic as applied above would further teach or suggest assigning an importance to each relationship based on the evaluated probability (§¶ 0047-0049).

Adamic does not expressly teach an Object Relationship database comprising objects, wherein each object comprises a noun, verb, adjective, adverb, phrase, sentence, symbol, or numeric character, and using a system comprising the claimed limitations (processor...user interface).

However, Brown and Kennedy as applied above teaches or suggests an Object Relationship database comprising objects, wherein each object comprises a noun, verb, adjective, adverb, phrase, sentence, symbol, or numeric character, and using a system comprising the claimed limitations (processor...user interface). See above rejections.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Adamic with Brown and Kennedy as applied

above, such that an object relationship database can be used and relations can be identified, retrieved, grouped, ranked, and filtered, and a user interface can be implemented, as claimed. The motivation would have been to provide a computing platform to process and present the data of Adamic, as known to one of ordinary skill in the art.

**As to claim 128**, Adamic as applied above further teaches wherein the importance is a function of the number of times two objects are co-mentioned within the topical set in the domain of information (e.g., see above, fig. 4A, ¶¶ 0052-0071).

**As to claim 129**, Adamic as applied above further teaches wherein the importance is a function of the textual distance between two objects (e.g., see fig. 3).

**As to claim 130**, Adamic as applied above teaches the importance based on relevance (e.g., ¶ 0052).

**As to claim 132**, Adamic as applied above further teaches wherein a natural language processing engine is used to identify one or more co-occurrences of objects (e.g., from articles, ¶¶ 0021-0022).

**As to claim 133**, Adamic as applied above further teaches wherein contextual information within the topical set is used to assign importance (e.g., leukemia and MLL documents in a set of medical documents, ¶¶ 0041-0049).

**As to claim 134**, Adamic as applied above further teaches wherein contextual information within the topical set is used to assign a nature to the relationship (e.g., strength of relationship, ¶ 0047).

**As to claim 135**, Adamic as applied above further teaches wherein importance is veracity (see e.g., fig. 4B, ¶¶ 0052 – 0071).

**11. Claim 131 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adamic in view of Brown, Kennedy, and Deligne et al (US 6,314,399), hereinafter “Deligne.”**

**As to claim 131**, Adamic, Brown, and Kennedy as applied above teaches importance, but does not expressly teach evaluation of one or more co-occurrence patterns over time.

However, Deligne teaches evaluation of one or more co-occurrence patterns over time (e.g., col. 7, l. 45 – col. 8, l. 14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Adamic, Brown, and Kennedy, such that one or more co-occurrence patterns over time are evaluated. The motivation would have been to reduce processing complexity for high speed processing of expected number of co-occurrences of a sequence, as taught by Deligne (e.g., col. 7, ll. 45-60; col. 3, ll. 11-15).

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Lu whose telephone number is (571) 272-8594. The examiner can normally be reached on 8:30 - 5:00; M-F. Any prior art cited on the PTO-892 form that was not relied upon is considered pertinent to applicant's disclosure.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached at (571) 272-4080. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Charles E Lu/  
Examiner, Art Unit 2161  
5/10/2010